USDA

November 9, 2009

Dear Colleagues:

Over the past decade, evidence-based systematic reviews have replaced expert opinion as the predominant basis for health-related treatment guidelines and policy. The USDA's Evidence Analysis Library, of which the Nutrition Evidence Library (NEL) is a major component, specializes in conducting systematic reviews to inform nutrition policy and programs. Launched in July 2008, the library evaluates, synthesizes, and grades research using rigorous and transparent methodology to define the state of food and nutrition-related science. NEL provides ongoing support to the Dietary Guidelines Advisory Committee's scientific review process for developing recommendations for the Dietary Guidelines for Americans.

USDA is looking for a highly qualified group of professionals and graduate students to serve as volunteer Nutrition Evidence Library Abstractors to help us expand the NEL. Please share this memo and information with your professional colleagues and Master's or Doctoral candidates, and encourage them to volunteer for this unique opportunity.

This scholarly, professional development activity provides a variety of professional and personal benefits. The NEL:

- Broadens professional knowledge
- Develops skill in literature review and analysis
- Increases professional exposure

Abstractors will gain a comprehensive understanding of evidence-based systematic review methodology by completing the on-line NEL Abstractor Training Workshop and serving on project teams. The workshop covers the steps necessary to conduct an evidence-based review, as well as navigating the NEL.

After successfully completing NEL training, abstractors will join a NEL project to begin reviewing published research articles and developing evidence worksheets. All NEL training and work is conducted on-line using a web-based portal. NEL projects are managed by staff at the USDA Center for Nutrition Policy and Promotion. Abstractors receive an honorarium of $240 per set of 8 completed evidence worksheets.

The attachment (Attachment) to this email outlines evidence abstractor responsibilities, qualifications, and the application process. Do not hesitate to contact the NEL Project Management staff for additional information: NutritionEvidenceLib@cnpp.usda.gov

Thank you for supporting this important endeavor!

Rajen Anand, DVM, PhD
Executive Director
Center for Nutrition Policy and Promotion

USDA Nutrition Evidence Library (NEL) Evidence Abstractor Fact Sheet

Nutrition Evidence Library Abstractors for NEL will participate in developing portfolios of evidence abstracts for use as a resource by the Dietary Guidelines Advisory Committee (DGAC) and other important research projects to inform nutrition policies and programs. The specific responsibilities, qualifications, time commitment, stipend, and application process follow.

Qualifications

- Advanced degree in nutrition (M.S., M.D., or Ph.D. candidate) and a minimum of 5 years experience in the field (epidemiology, public health, or any nutrition-related field).
- Ability to abstract critical information and research characteristics from technical articles.
- Ability to produce consistent work in a timely manner and work as part of a team.
- Skilled user of computer and web-based programs and tools.
- Knowledge of current science in human nutrition or a related public health field.
- Knowledge and experience with research methodologies, including experimental design and statistics.

Responsibilities

- Complete NEL Evidence Abstractor Training program and calibration exercise. The program consists of three comprehensive online training modules with video tutorials, followed by an evidence-abstracting calibration exercise and conference calls. On average, training program completion takes most volunteers10-15 hours.
- Read and appraise assigned articles based on the Research Design and Implementation Checklist.
- Prepare evidence worksheets using the electronic NEL portal and web tools in a standardized format. (See attached sample NEL evidence worksheet.)
- Respond to email communications from NEL Project Managers.

Time Commitment and Stipend: NEL Evidence Abstractors are expected to produce worksheets for at least 30-60 articles per year with a minimum 2-year commitment and an estimated average of 3 hours of work per week. However, depending on Evidence Abstractor availability, the number of articles abstracted per year may vary. Evidence Abstractors are National Service volunteers, not paid USDA employees. Abstractors do receive a monetary honorarium of $240.00 per set of 8 completed and approved evidence worksheets.

Computer Requirements: NEL Evidence Abstractors must have access to a computer with high-speed internet access. No special software is required; all of the tools and templates are provided online on USDA's Nutrition Evidence Library portal. Minimum requirements to complete the necessary worksheets are:

- Microsoft Internet Explorer 5.5 or newer with 1284 x 1024 screen resolution in 256 colors.
- Adobe Acrobat Reader and Flash 9 must be installed on your computer (free downloads).
- Your computer must be set to accept Java, JavaScript (also a free download), and cookies.

How to Apply:

The USDA Nutrition Evidence Library accepts applications for volunteer NEL Evidence Abstractors on an ongoing basis. Applications must be submitted by electronic mail to NutritionEvidenceLib@cnpp.usda.gov

Hard copy applications via posted mail **will not** be accepted. An application review and selection panel takes place on a bi-monthly basis to consider complete applications of individuals qualified to serve as NEL Evidence Abstractors.

The following information should be included in each application for consideration:

1. **The applicant's name, address and daytime telephone number, and email address.**
2. **A letter of application that clearly states the name and affiliation of the applicant, the basis for the application (i.e., specific attributes which qualify the applicant for service as a Nutrition Evidence Library Abstractor) and any potential conflicts of interest.**
3. **A current copy of the applicant's curriculum vitae.**
4. **A list of three professional references with contact information.**

All applications must include the required information. Incomplete applications will not be processed for consideration.

USDA staff will make every effort to ensure that the pool of NEL Evidence Abstractors includes a broad representation of geographic areas, females, ethnic and minority groups, and the disabled. Abstractor selection will be made without discrimination on the basis of age, race, ethnicity, gender, sexual orientation, disability, and cultural, religious, or socioeconomic status.

For additional information, contact:

NEL Management Team Leaders at **NutritionEvidenceLib@cnpp.usda.gov.**

Citation: Pimenta E, Gaddam KK, Oparil S, Aban I, Husain,Dell'Italia LJ, Calhoun DA. Effects of Dietary Sodium Reduction on Blood Pressure in Subjects With Resistant Hypertension Results From a Randomized Trial. Hypertension. 2009 Jul 20. [Epub ahead of print]

PubMed ID: 19620517

Study Design: Randomized, crossover trial

Class: A - Click here for explanation of classification scheme.

Research Design and Implementation Rating: POSITIVE: See Research Design and Implementation Criteria Checklist below.

Research Purpose:

- To determine the effects of dietary sodium restriction on office and 24-hour ambulatory blood pressure in patients with resistant hypertension

Inclusion Criteria:

- Patients had resistant hypertension, defined as uncontrolled hypertension (systolic blood pressure >140 or diastolic blood pressure >90 mmHg) determined at ≥2 clinic visits despite the use of ≥3 antihypertensive medications at pharmacologically effective doses and had been on a stable antihypertensive regimen, including a thiazide-type diuretic, for at least 4 weeks before enrollment.

Exclusion Criteria:

- Subjects with a history of atherosclerotic disease (myocardial infarction or stroke in the previous 6 months), congestive heart failure, or diabetes on insulin treatment; and subjects with an office blood pressure >160/100 mmHg.

Description of Study Protocol:

Recruitment

- Consecutive subjects recruited to the University of Alabama at Birmingham Hypertension clinic for resistant hypertension were recruited.

Design

- 4-week, randomized crossover trial with two 1-week interventions (low- or high-salt diet) and a 2-week washout period

Dietary Intake/Dietary Assessment Methodology (if applicable):

- Compliance with dietary regimen was assessed by 24-hour sodium excretion, not dietary record.

Blinding used (if applicable)

- Not blinded.

Intervention (if applicable)

- Subjects completed two 1-week interventions (low- or high-salt diet) and a 2-week washout period (regular diet)
- Low-salt diet: All low-salt meals and snacks were provided and formulated to contain 50 mmol of sodium per day. Two diets with either 2000 calories (31.2% fat, 48.4% carbohydrate, and 20.4% protein) or 2500 calories (30.8% fat, 50.4% carbohydrate, 18.8% protein) were provided to maintain subjects' baseline body weight.
- High-salt diet: 6 g/day of sodium chloride was added to subjects' regular diet to increase dietary sodium to >250 mmol/day

Statistical Analysis

- Mixed modeling for repeated measures was used, the effect of treatment order was assessed, and changes in 24-hour ambulatory blood pressure monitoring

were calculated.
- The sign test was used to test mean differences assuming that time order was not significant, and exact binomial confidence intervals for the median were reported.

Data Collection Summary:

Timing of Measurements

- Body weight, office blood pressure, and 24-hour ambulatory blood pressure monitoring, biochemical evaluation, pulse wave analysis, and pulse wave velocity were determined immediately before randomization and at the end of each 1-week dietary intervention.

Dependent Variables

- Aortic pulse wave velocity: a marker of arterial stiffness, calculated from measurements of common carotid and femoral artery wave-forms using an automatic applanation tonometry-based device
- Aortic augmentation index: a marker of arterial stiffness, quantified as a percentage of aortic pulse pressure
- Office systolic and diastolic blood pressure: seated, after 5 minutes of rest
- 24-hour ambulatory blood pressure monitoring: recorded blood pressure every 20 minutes during the day and every 30 minutes during the night
- Biochemical analyses: serum potassium, creatinine, brain natriuretic peptide, plasma aldosterone, and plasma renin activity
- 24-hour urine collections: aldosterone, sodium, potassium, and creatinine
- Body weight

Independent Variables

- Low- or high-salt diet

Control Variables

- Treatment order

Description of Actual Data Sample:

Initial N: 13
Attrition (final N): 12 (4 males and 8 females)
Age: mean (standard deviation) of 55.5 (9.4) years
Ethnicity:6 black, 6 white
Other relevant demographics: none
Anthropometrics: mean (standard deviation) body mass index of 32.9 (6.3) kg/m^2
Location: Alabama, US

Summary of Results:

Key Findings

- Mean office systolic and diastolic blood pressure were reduced by 22.7 (95% confidence interval, 11.8 - 33.5) mmHg and 9.1 (95% confidence interval, 3.1 - 15.1) mmHg, respectively, during low- compared to high-salt diets.
- Low-salt diet decreased office, daytime, nighttime, and 24-hour systolic and diastolic blood pressure significantly compared to high salt ingestion.

Variables	Mean change between high- and low-salt diet, 95% confidence interval	Statistical Significance of Group Difference (p-value)
Augmentation index, %	---	0.0554
Pulse wave velocity, m/s	---	0.1671
Office blood pressure, systolic, mmHg	-22.7 (-33.5, -11.8)	0.0008
Office blood pressure, diastolic, mmHg	-9.1 (-15.1, -3.1)	0.0065
Ambulatory blood pressure monitoring, mmHg (24-hour systolic)	-20.1 (-28.1, -12.1)	0.0002
Ambulatory blood pressure monitoring, mmHg (24-hour diastolic)	-9.8 (-13.8, -5.8)	0.0002

*p-value and 95% confidence interval are based on the sign test

Other Findings

- Pulse wave velocity and aortic augmentation index decreased with low compared to high-salt diet, but not significantly (p>0.05).

- The reductions in brain natriuretic peptide, body weight, and creatinine clearance, and the increase in plasma renin activity, are indicative of a reductionin intravascular volume.
- After statistically correcting for testing multiple variables, only office systolic blood pressure and all ambulatory blood pressure monitoring remained significant.

Author Conclusion:

- Dietary salt restriction substantially reduced both office and 24-hour ambulatory blood pressure, demonstrating that excessive salt ingestion contributes importantly to elevated blood pressure levels in patients with resistant hypertension.

Reviewer Comments:

Strengths

- *Crossover, randomized design, use of 24-hour ambulatory blood pressure monitoring, and confirmation of dietary adherence with 24-hour urinary sodium excretion measurements*

Limitations

- *Evaluation of a relatively small number of subjects, unblinded administration of the salt diets, and short duration of the dietary treatment periods.*

Research Design and Implementation Criteria Checklist: Primary Research

Relevance Questions		
1.	Would implementing the studied intervention or procedure (if found successful) result in improved outcomes for the patients/clients/population group? (Not Applicable for some epidemiological studies)	Yes
2.	Did the authors study an outcome (dependent variable) or topic that the patients/clients/population group would care about?	Yes
3.	Is the focus of the intervention or procedure (independent variable) or topic of study a common issue of concern to dieteticspractice?	Yes
4.	Is the intervention or procedure feasible? (NA for some epidemiological studies)	Yes

Validity Questions		
1.	**Was the research question clearly stated?**	Yes
1.1.	Was the specific intervention(s) or procedure (independent variable(s)) identified?	Yes
1.2.	Was the outcome(s) (dependent variable(s)) clearly indicated?	Yes
1.3.	Were the target population and setting specified?	Yes
2.	**Was the selection of study subjects/patients free from bias?**	Yes
2.1.	Were inclusion/exclusion criteria specified (e.g., risk, point in disease progression, diagnostic or prognosis criteria), andwithsufficient detail and without omitting criteria critical to the study?	Yes
2.2.	Were criteria applied equally to all study groups?	Yes
2.3.	Were health, demographics, and other characteristics of subjects described?	Yes
2.4.	Were the subjects/patients a representative sample of the relevant population?	???
3.	**Were study groups comparable?**	Yes
3.1.	Was the method of assigning subjects/patients to groups described and unbiased? (Method of randomization identified if RCT)	Yes
3.2.	Were distribution of disease status, prognostic factors, and other factors (e.g., demographics) similar across study groups at baseline?	N/A
3.3.	Were concurrent controls used? (Concurrent preferred over historical controls.)	N/A

3.4.	If cohort study or cross-sectional study, were groups comparable on important confounding factors and/or were preexisting differencesaccounted for by using appropriate adjustments in statistical analysis?	N/A
3.5.	If case control or cross-sectional study, were potential confounding factors comparable for cases and controls? (If case series or trial with subjects serving as own control, this criterion is not applicable. Criterion may not be applicable in some cross-sectional studies.)	N/A
3.6.	If diagnostic test, was there an independent blind comparison with an appropriate reference standard (e.g., "gold standard")?	N/A
4.	**Was method of handling withdrawals described?**	Yes
4.1.	Were follow-up methods described and the same for all groups?	Yes
4.2.	Was the number, characteristics of withdrawals (i.e., dropouts, lost to follow up, attrition rate) and/or response rate (cross-sectional studies) described for each group? (Follow up goal for a strong study is 80%.)	Yes
4.3.	Were all enrolled subjects/patients (in the original sample) accounted for?	Yes
4.4.	Were reasons for withdrawals similar across groups?	N/A
4.5.	If diagnostic test, was decision to perform reference test not dependent on results of test under study?	N/A
5.	**Was blinding used to prevent introduction of bias?**	No
5.1.	In intervention study, were subjects, clinicians/practitioners, and investigators blinded to treatment group, as appropriate?	No
5.2.	Were data collectors blinded for outcomes assessment? (If outcome is measured using an objective test, such as a lab value, thiscriterion is assumed to be met.)	Yes
5.3.	In cohort study or cross-sectional study, were measurements of outcomes and risk factors blinded?	N/A
5.4.	In case control study, was case definition explicit and case ascertainment not influenced by exposure status?	N/A
5.5.	In diagnostic study, were test results blinded to patient history and other test results?	N/A
6.	**Were intervention/therapeutic regimens/exposure factor or procedure and any comparison(s) described in detail? Were interveningfactors described?**	Yes
6.1.	In RCT or other intervention trial, were protocols described for all regimens studied?	Yes
6.2.	In observational study, were interventions, study settings, and clinicians/provider described?	N/A
6.3.	Was the intensity and duration of the intervention or exposure factor sufficient to produce a meaningful effect?	???
6.4.	Was the amount of exposure and, if relevant, subject/patient compliance measured?	Yes
6.5.	Were co-interventions (e.g., ancillary treatments, other therapies) described?	N/A
6.6.	Were extra or unplanned treatments described?	N/A
6.7.	Was the information for 6.4, 6.5, and 6.6 assessed the same way for all groups?	Yes
6.8.	In diagnostic study, were details of test administration and replication sufficient?	N/A
7.	**Were outcomes clearly defined and the measurements valid and reliable?**	Yes
7.1.	Were primary and secondary endpoints described and relevant to the question?	Yes
7.2.	Were nutrition measures appropriate to question and outcomes of concern?	N/A
7.3.	Was the period of follow-up long enough for important outcome(s) to occur?	???
7.4.	Were the observations and measurements based on standard, valid, and reliable data collection instruments/tests/procedures?	Yes
7.5.	Was the measurement of effect at an appropriate level of precision?	Yes

	7.6.	Were other factors accounted for (measured) that could affect outcomes?	Yes
	7.7.	Were the measurements conducted consistently across groups?	Yes
8.	**Was the statistical analysis appropriate for the study design and type of outcome indicators?**		Yes
	8.1.	Were statistical analyses adequately described and the results reported appropriately?	Yes
	8.2.	Were correct statistical tests used and assumptions of test not violated?	Yes
	8.3.	Were statistics reported with levels of significance and/or confidence intervals?	Yes
	8.4.	Was "intent to treat" analysis of outcomes done (and as appropriate, was there an analysis of outcomes for those maximally exposedora dose-response analysis)?	N/A
	8.5.	Were adequate adjustments made for effects of confounding factors that might have affected the outcomes (e.g., multivariate analyses)?	Yes
	8.6.	Was clinical significance as well as statistical significance reported?	No
	8.7.	If negative findings, was a power calculation reported to address type 2 error?	N/A
9.	**Are conclusions supported by results with biases and limitations taken into consideration?**		Yes
	9.1.	Is there a discussion of findings?	Yes
	9.2.	Are biases and study limitations identified and discussed?	Yes
10.	**Is bias due to study's funding or sponsorship unlikely?**		Yes
	10.1.	Were sources of funding and investigators' affiliations described?	Yes
	10.2.	Was the study free from apparent conflict of interest?	Yes